

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendments to the claims, in the submission dated 4/20/10, are acknowledged and accepted.

## **EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Obert H. Chu on 6/15/10.

The application has been amended as follows:

In claim 1, lines 10-12, replace:

"recording data pages by N exposures, in which N bit map images exposed in N separate exposure times so that they are summed up, for each data page at (N+1) levels of gradation with respect to each of areas of the recording layer"  
with:

-- recording data pages by N exposures, in which N bit map images are exposed in N separate exposure times so that they are summed up for each data page, at (N+1) levels of gradation with respect to each of the areas of the recording layer--

In claim 1, line 18, replace:

"0% by exposure of 0 times"

with:

--0% by exposure of 0 times,--

In claim 6, lines 27-28, replace:

"making N exposures in which N images of bit map are exposed in N separate exposure times so that they summed up to each data page"

with:

--making N exposures in which N bit map images are exposed in N separate exposure times so that they are summed up for each data page--

In claim 16, lines 10-11, replace:

"making N exposures in which N images of bit map are exposed in N separate times so that they summed up to the data page"

with:

--making N exposures in which N bit map images are exposed in N separate times so that they are summed up for each data page--

***Allowable Subject Matter***

3. The following is an examiner's statement of reasons for allowance:
4. Claims 1, 3-8, 10, 11 and 13-16 are allowed.

5. Claims 1, 6 and 16 are allowable over the prior art of record for at least the reason that even though the prior art discloses a holographic recording method and apparatus for irradiating a recording layer of a holographic recording medium with an object beam and a reference beam through an object optical system and a reference optical system, respectively, so that a data page is recorded thereon in the form of interference fringes, the method comprising: exercising control of the object optical system between an exposure direction and a non-exposure direction, so that the object beam in the object optical system is reflected in an exposure direction so as to be incident on the holographic recording medium or in a non-exposure direction so as not to be incident on the holographic recording medium selectively pixel by pixel in accordance with the data page to be recorded; recording data pages by N exposures, where  $t_o$  is an exposure time necessary for exposing one of the areas of the recording layer corresponding to a single pixel of the data page as much as approximately 100%, and N is an integer of not less than 2; and exposing the areas as much as approximately 100% by exposure of N times, as much as 0% by exposure of 0 times and as much as more than 0% and less than 100% by exposure of between 1 and (N-1) times, the prior art fails to teach or reasonably suggest that N bit map images are exposed in N separate exposure times so that they are summed up for each data page, at (N + 1) levels of gradation with respect to each of the areas of the recording layer corresponding to a single pixel of the data page by the object beam with a single exposure time  $t_i$  given by dividing  $t_o$  by N. Claims 3-5, 7-8, 10-11, and 13-15 are

dependent on claims 1 and 6 and are allowable over the prior art of record for at least the same reasons as claim 1 and 6.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jade R. Chwasz whose telephone number is (571)272-8199. The examiner can normally be reached on Monday to Friday 6:00 am -3:30 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRC  
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